



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
2002/01272

March 4, 2003

Mr. Lawrence C. Evans
Chief, Regulatory Branch
Portland District, Corps of Engineers
P. O. Box 2946
Portland, OR 97208-2946

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Fishery and Conservation Management Act Essential Fish Habitat Consultation for the Confluence Island Habitat Improvement Project, Willamette River, Lane County, Oregon (Corps No. 2002-00840)

Dear Mr. Evans:

Enclosed is a biological opinion (Opinion) prepared by the National Marine Fisheries Service (NOAA Fisheries) for the proposed Confluence Island Habitat Improvement Project in Lane County, Oregon. A Clean Water Act section 404 permit is required to carry out elements of the project, and this constitutes the Federal nexus. The McKenzie Watershed Council (MWC), working in cooperation with the Oregon Department of Fish and Wildlife (ODFW) and the landowner, has developed the project design.

This document considers the potential effects of the project on Upper Willamette River (UWR) chinook salmon (*Oncorhynchus tshawytscha*) which occur in the proposed project area. NOAA Fisheries concludes that the proposed action is not likely to jeopardize the ESA-listed species. Pursuant to section 7 of the Endangered Species Act (ESA), NOAA Fisheries has included reasonable and prudent measures with non-discretionary terms and conditions that NOAA Fisheries believes are necessary and appropriate to minimize the potential for incidental take associated with this project.

This document also serves as consultation on essential fish habitat (EFH) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and implementing regulations at 50 CFR Part 600. NOAA Fisheries concludes that the proposed action may adversely affect designated EFH for chinook salmon. As required by section 305(b)(4)(A) of the MSA, included are conservation recommendations that NOAA Fisheries believes will avoid, minimize, mitigate or otherwise offset adverse effects on EFH resulting from the proposed action. As described in the enclosed consultation, 305(b)(4)(B) of the MSA requires that a Federal action agency must provide a detailed response within 30 days of receiving an EFH conservation recommendation.



Questions regarding this letter should be directed to Pat Oman of my staff in the Oregon Habitat Branch at 503.231.2313.

Sincerely,

for Michael R Crouse

D. Robert Lohn
Regional Administrator

cc: Brad Goehring, USFWS
Teena Monical, USACE
Vivienne Torgeson, OWEB
Jeffrey Ziller, ODFW

Endangered Species Act - Section 7 Consultation Biological Opinion

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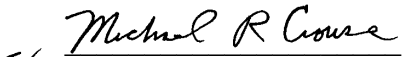
Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation

Confluence Island Habitat Improvement Project
McKenzie Highway, Lane County, Oregon

Agency: U.S. Army Corps of Engineers

Consultation
Conducted By: NOAA Fisheries,
Northwest Region

Date Issued: March 4, 2002

Issued by: 
D. Robert Lohn
Regional Administrator

Refer to: 2002-01272

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1. INTRODUCTION

1.1 Background

The National Marine Fisheries Service (NOAA Fisheries) received a request from the U.S. Army Corps of Engineers (USACE) on October 17, 2002, for concurrence with a determination that the proposed Confluence Island Habitat Improvement Project in Lane County, Oregon would not adversely affect Upper Willamette River (UWR) chinook salmon (*Oncorhynchus tshawytscha*), listed as threatened under the Endangered Species Act (ESA). This determination of effect had been previously discussed with representatives of USACE, the Oregon Department of Fish and Wildlife (ODFW), the McKenzie Watershed Council (MWC), and NOAA Fisheries. In the course of developing the concurrence letter, further information about the project was obtained, and an agreement that the project could have short-term harmful effects changed the finding to “likely to adversely affect” (LAA).

NOAA Fisheries is consulting under the authority of section 7(a)(2) of the ESA and its implementing regulations, 50 CFR Part 402, and the Magnuson-Stevens Fishery Conservation and Management Act (MSA) section 305 (b)(2) its implementing regulations for essential fish habitat (EFH), 50 CFR Part 600.

The purpose of this project is to construct an alcove at a site on the western edge of Confluence Island in the Willamette River, near the mouth of the McKenzie River. This will create rearing habitat for fish during low flows and a refuge for fish during high flows, as well as nesting habitat for turtles. The proposed action is the construction of an off-channel alcove in an area where, historically, there were abundant side channels, meanders, and wetlands. Photographs of the area taken prior to extensive gravel mining, streambank stabilization, and channelization indicate that the confluence area had extensive gravel bars kept free of vegetation by seasonal flooding. The project proponents intend to create habitat for fish and for the western pond turtle (*Clemmys marmorata*) by removing vegetation, constructing an alcove, and placing large woody debris (LWD) in the alcove. To prevent the release of sediment into the river, a coffer dam will be built at the mouth (northwest end) of the alcove area. The excavation mostly will be done in the dry, with the approximately 14,800 cubic yards of removed material deposited in two sites. About 60% of the excavated sand and gravel will be placed in a depression on the island; the remaining 40% will be placed on the opposite side of the island, on a terrace that is above the 10-year peak flow elevation. Large cottonwood trees will be left in place along the edge of the alcove, and smaller vegetation, including 29 cottonwoods with diameters at breast height (DBH) of 8 to 18 inches, will be knocked over and left in the alcove to provide rearing and resting habitat for juvenile salmonids. During seasonal periods of high flows, the river will flood this area and the alcove will function as a refuge for fish. The design for this project was developed by the MWC with the cooperation of the landowner, Delta Sand and Gravel Company, and with ongoing consultation with ODFW.

Most of the activities will be done off-channel and “in the dry” to avoid the introduction of sediments into the active flowing channel of adjacent waterways. In addition, mitigation

measures to minimize erosion and sediment transport from the project site, control the potential for fuel spills from heavy equipment, and meet other environmental protection goals will be implemented.

The following consultations are based on the information presented in the applications for a Department of State Lands (DSL) fill and removal permit, a USACE fill permit, multiple conversations and e-mails with John Runyon of the WSC and Jeff Ziller of ODFW in September and October, 2002, and as a result of the consultation process.

1.2 Proposed Actions

1.2.1 Construction of a Cofferd Dam/Work Area Isolation

The alcove construction will take place in an existing depression that is oriented generally northwest-southeast on the western side of Confluence Island, on the right bank (looking downstream) of a side channel of the Willamette River. Prior to excavating the alcove, a coffer dam will be constructed out of sand and gravel on the northwest end of the depression, right at the edge of the side channel and below the ordinary high water mark. This will be done using heavy equipment. The coffer dam will prevent water from entering the alcove as it is excavated. Once the bulk of the material, approximately 14,800 cubic yards of sand and gravel, has been removed, the coffer dam will be breached.

1.2.2 Alcove Construction and Material Disposal

The alcove will be dug out using heavy, tracked equipment, and the material will be transported by dump truck to other areas of the island, where it will be deposited in an existing depression and on the eastern side of the island, on the left bank (looking downstream) of the main channel of the Willamette River, at a location that is above the 10-year flood elevation. At present, a 350-foot section of the alcove depression is under about one foot of water, and this area will be excavated out behind the coffer dam as well. Machinery will operate from the west side to avoid disturbance to the larger cottonwood trees along the east side of the depression. Smaller cottonwood trees will be knocked over with heavy equipment to keep their rootwads intact, set aside, and replaced in the alcove once construction is complete. The alcove, when finished, will be approximately 1000 feet long, with a trapezoidal cross-section. The depth of the alcove during the summer will be approximately 20 feet, and during the winter/high flow period, the entire area will be a slower flow refugia for fish.

The proposed project will remove non-native vegetation (mostly blackberry and Scotch broom) from the downstream section of the 620-foot peninsula area that will be formed by the construction of the alcove. This shade-free area of sparse vegetation will function as nesting and rearing habitat for pond turtles. The peninsula area will be scalped with a crawler tractor, graded, and planted with native vegetation (red fescue). Subsequent control of invasive, non-native vegetation will be by mechanical means only.

1.2.3 Seining and Removal of Fish

ODFW fish surveys have confirmed the presence of UWR chinook in the side channel adjacent to the proposed project, even though it is above the mouth of the McKenzie, which is the area of highest concentration of resting/rearing and spawning activity for this species. Because there is a small amount of water in the lower 1/3 of the alcove depression area, ODFW has made it a condition of the DSL permit to seine and remove any fish that may be present in the area. This will be done by qualified fish biologists prior to the construction of the coffer dam, and after the coffer dam is in place to ensure that no listed fish are entrapped. This work will take place during the preferred in-water work period, which for this reach of the Willamette River is from June 1 to October 31.

2. ENDANGERED SPECIES ACT

2.1 Biological Opinion

The objective of this Opinion is to determine whether the proposed action to construct an alcove along the bank of Confluence Island, adjacent to a side channel of the Willamette River, is likely to jeopardize the continued existence of UWR chinook salmon.

2.1.1 Biological Information

The UWR chinook salmon evolutionarily significant unit (ESU) was listed as threatened under the ESA by NOAA Fisheries on March 24, 1999 (64 CFR 14308). Biological information on UWR chinook salmon may be found in the *Status Review of Chinook Salmon from Washington, Idaho, Oregon, and California* (Myers *et al.* 1998).

According to ODFW, the McKenzie River population of UWR spring chinook is the healthiest of the entire ESU:

The McKenzie basin is the most important remaining area for natural production of spring chinook in the Willamette Basin. Although heavily influenced by hatchery fish, the wild population of spring chinook in the McKenzie River is the most productive in the Willamette gene conservation group. Although dams on tributaries (Blue River and South Fork) have eliminated some historic spawning areas, fish still have access to relatively undisturbed spawning and rearing habitat. The McKenzie River continues to be capable of producing at least several thousand wild adults, despite habitat alterations such as gravel operations and channelization in the lower McKenzie and Willamette rivers, an unscreened 2400 cfs hydroelectric diversion, and flood control reservoirs in the upper watershed. Current adult escapement is believed to be much less than the number required to fully seed the habitat. (From the ODFW stock status report at: <http://www.dfw.state.or.us/springfield/McKChs.html>.)

2.1.2 Evaluating Proposed Action

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). NOAA Fisheries must determine whether the action is likely to jeopardize the listed species. This analysis involves the definition of the biological requirements and current status of the listed species; and evaluation of the relevance of the environmental baseline to the species' current status.

Subsequently, NOAA Fisheries evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NOAA Fisheries must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action; (2) the environmental baseline; and (3) any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmonid's life stages that occur beyond the action area. If NOAA Fisheries finds that the action is likely to jeopardize the listed species, NOAA Fisheries must identify reasonable and prudent alternatives for the action.

Furthermore, NOAA Fisheries must determine whether habitat modifications appreciably diminish both survival and recovery of the listed species. NOAA Fisheries identifies those effects of the action that impair the function of any essential element of habitat. NOAA Fisheries then considers whether such impairment appreciably diminishes the habitat's value for the species' survival and recovery.

For the proposed action, NOAA Fisheries' jeopardy analysis considers direct or indirect mortality of fish attributable to the action.

2.1.3 Biological Requirements

The first step in the methods NOAA Fisheries uses for applying the ESA section 7(a)(2) to listed salmon is to define the species' biological requirements that are most relevant to each consultation. NOAA Fisheries also considers the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NOAA Fisheries starts with the determinations made in its decision to list UWR chinook salmon (Myers *et al.*, 1998) for ESA protection and also considers new data available that is relevant to the determination.

The relevant biological requirements are those necessary for UWR chinook salmon to survive and recover to naturally-reproducing population levels, at which time protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful migration, spawning, holding, and rearing. The current status of

the UWR chinook salmon, based upon their risk of extinction, has not significantly improved since the species were listed and, in some cases, their status may have worsened. Adult UWR chinook returns to the McKenzie River have declined from highs of 10,000-13,000 during 1988 to 1991, to recent low levels of 3,000-4,000 from 1994 to 1998. Of all the areas of habitat for UWR chinook salmon, the McKenzie River watershed is critical to maintaining this ESU (ODFW: January, 1999 stock status report).

2.1.4 Environmental Baseline

The current range-wide status of the identified ESU's may be found in Myers *et al.* (1998) and Busby *et al.* (1996). The identified action will occur within the range of UWR chinook salmon. The defined action area is the area that is directly and indirectly affected by the action. The direct effects occur at the project site and may extend upstream or downstream based on the potential for impairing fish passage, hydraulics, sediment and pollutant discharge, and the extent of riparian habitat modifications. Indirect effects may occur throughout the watershed where actions described in this Opinion lead to additional activities or affect ecological functions contributing to stream degradation. As such, the action area for the proposed activities include the immediate watershed where the alcove construction will take place, and those areas upstream and downstream that may reasonably be affected, temporarily or in the long term. For the purposes of this Opinion, the action area is defined as the streambed and streambank of the side and main channels of the Willamette River, extending upstream to the edge of disturbance, and extending downstream to the extent of visible short-term turbidity increases resulting from the project work. Other areas of the Willamette River watershed are not expected to be directly or indirectly impacted.

UWR chinook salmon occur throughout the Willamette River and its tributaries. Adult spring chinook salmon require deep pools within reasonable proximity to spawning areas where they hold and mature for several months between migration and spawning. Preferred spawning and rearing areas have a low gradient (generally less than 3%), but adults often ascend much higher gradient reaches to find desirable spawning areas.

Water quality at this location in the Willamette River is generally good. According to the Oregon Department of Water Quality (ODEQ), water quality in the Upper Willamette is "primarily influenced by extensive agriculture, although municipal and industrial point sources and urban non-point sources contribute to water quality conditions as well." A monitoring site in Springfield shows that "water quality is occasionally impacted during high and low flows by increases in total phosphates and biochemical oxygen demand, accompanied by high concentrations of total solids and fecal coliforms. [Oregon Water Quality Index] results indicate the Willamette River at Springfield is consistently excellent" (ODEQ Internet website at: <http://www.deq.state.or.us/lab/WQM/WQI/upwill/upwill3.htm>). More information on water quality in the upper Willamette is located on the draft 2002 303(d) list on DEQ's website, at <http://www.deq.state.or.us/wq/WQLData/MapSearchISMAP02.htm>.

Based on the best available information on the current status of UWR chinook salmon range-wide, the population status, trends, and genetics, and the “at risk” environmental baseline conditions within the action area, NOAA Fisheries concludes that the biological requirements of this ESU within the action area are not currently being met. The following habitat indicators are either at risk or not properly functioning within the action area: Physical barriers, large woody debris, and pool frequency. Actions that do not maintain or restore properly functioning aquatic habitat conditions would be likely to jeopardize the continued existence of UWR chinook salmon.

2.1.5 Analysis of Effects

2.1.5.1 Effects of Proposed Action

The effects of actions are expressed in terms of the expected effect (restore, maintain, or degrade), on aquatic habitat factors in the project area. The current status of the site is at risk because of extensive channelization and streambank stabilization, ongoing gravel mining, the lack of large woody debris recruitment (LWD), and the lack of pool habitat. The construction of the alcove will create a pool/refugia area, and placement of LWD in the alcove will improve this aquatic habitat parameter. The proposed action has the potential to cause the following impacts to UWR chinook salmon or habitat:

The alcove construction, particularly the construction of the coffer dam and excavation of the wetted portion of the depression, will create some turbidity. Because the excavation will be completed, for the most part, in the dry, this turbidity will be manifest once the coffer dam is breached and water flows into the alcove. This may cause some short-term and temporary harmful effects to juvenile salmonids in the project’s action area. Possible impacts to water quality could occur from chemical contamination if the use of heavy equipment results in fuel spills, and increased turbidity levels from the aftermath of coffer dam construction and alcove excavation. Localized increases of erosion/turbidity during the limited amount of in-water work will likely displace UWR chinook salmon in the project area and disrupt normal behavior. These effects are expected to be temporary and localized, and since seining fish out of the alcove area will take place before construction, the number of fish impacted is expected to be very small. The removal of the bulk of the excavated material will be done in the dry, thereby minimizing turbidity and opportunities for contamination. The removed material will be placed in an approved upland site.

Handling fish during the seining operation has the potential to stress or otherwise harm listed salmonids, if any are present (most of the juvenile fish use in this area is during higher water than what is anticipated during the construction period). This work will be done by fish biologists trained in methods to handle fish gently, so any mortality will be minimal. An estimate provided by Jeff Ziller, ODFW district biologist for this area, is that up to 100 fish may be removed, with take limited to approximately 2% (Jeff Ziller, personal communication via e-mail to Pat Oman, February 9, 2003).

The removal of small cottonwood trees from the peninsula area will reduce the amount of riparian vegetation and, consequently, will eliminate the benefits to aquatic temperatures that are created by shade. Because of the size and location of these trees on the project site, there is very little shade now being cast directly on the water. These trees will be placed in the alcove for rearing/resting habitat benefits.

This section of the Willamette River is primarily used as a migratory corridor by listed fish species. Because of the proximity to the McKenzie River, a variety of species and life stages may utilize the project reach. After construction, this project will have benefits for both adults and juveniles, as velocity breaks/refugia during high flows, and as rearing/resting habitat for juveniles during low flows. Because of the minor in-water work and flow alteration from coffer dam/alcove construction, the removal of riparian vegetation from the gravel bar, and seining of fish, take of ESA-listed fish is reasonably certain to occur.

The effects of these activities on UWR chinook salmon and aquatic habitat will be limited by carrying out most of the construction during dry weather, implementing sediment control measures for the disposal sites, replacing any removed riparian vegetation, and placing LWD in the newly constructed alcove.

2.1.5.2 Cumulative Effects

"Cumulative effects" are defined in 50 CFR 402.02 as those effects of "future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." The action area for this consultation includes the streambed and streambank of the Willamette River within the area of disturbance at the project site and downstream to the extent of visible short-term turbidity increases resulting from the project work. NOAA Fisheries is not aware of any specific future actions which are reasonably certain to occur on non-federal lands within the Upper Willamette River subbasin.

2.1.6. Conclusion

After reviewing the current status of UWR chinook salmon, the environmental baseline for the action area, the effects of the proposed Confluence Island Habitat Improvement Project, and its cumulative effects, it is the NOAA Fisheries opinion that this project, as proposed, is not likely to jeopardize the continued existence of the UWR chinook salmon. NOAA Fisheries believes the proposed action would cause minor, short-term adverse effects to anadromous salmonid habitat due to sediment/turbidity impacts and removal of riparian vegetation. The long term effects, however, will be to improve pool frequency and LWD levels. This conclusion is based on findings that the measures to carry out the proposed action will include safeguards to minimize death or injury to UWR chinook salmon, and that completion of the proposed action will contribute to the restoration of properly functioning conditions in this localized area of the Willamette River.

2.1.7 Reinitiation of Consultation

This concludes formal consultation on the Confluence Island Habitat Improvement Project. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained or is authorized by law and if: (1) The amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species in a manner or to an extent not considered in this Opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species not considered in this Opinion; or (4) a new species is listed or critical habitat is designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

2.2 Incidental Take Statement

Section 9 and rules promulgated under section 4(d) of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. “Harm” is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. “Harass” is defined as actions that create the likelihood of injuring listed species by annoying it to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. “Incidental take” is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

2.2.1 Amount or Extent of Take

NOAA Fisheries anticipates that the action covered by this Opinion is reasonably certain to result in incidental take of UWR chinook salmon because of detrimental effects from increased sediment levels (non-lethal), the potential for direct incidental take during the work area isolation, and delayed mortality due to handling during the fish removal process. Effects of actions such as increased sediment levels are largely unquantifiable in the short term, and are not expected to be measurable as long-term harm to habitat features or by long-term harm to UWR chinook salmon behavior or population levels. Direct incidental take during work area isolation will consist of harassment of any juvenile fish that are present. Subsequent seining, handling, and removal of fish is estimated to result in take of approximately 2% of the fish that are present. This number does not encompass any take that may result from the turbidity downstream of the project site, however. Therefore, even though NOAA Fisheries expects some low-level incidental take to occur due to the actions covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NOAA Fisheries to estimate a specific

amount of incidental take to the species itself. In instances such as these, NOAA Fisheries designates the expected level of take as "unquantifiable."

Based on the information in the permit application, NOAA Fisheries anticipates that an unquantifiable amount of incidental take is reasonably certain to occur as a result of the actions covered by this Opinion. In addition, NOAA Fisheries expects the possibility exists for handling UWR chinook salmon during the work isolation process resulting in incidental take to individuals during the construction period. The extent of the take is limited to UWR chinook salmon within the action area.

2.2.2 Reasonable and Prudent Measures

NOAA Fisheries believes that the following reasonable and prudent measures are necessary and appropriate for minimizing take of UWR chinook salmon:

1. Minimize the likelihood of incidental take from activities involving alcove construction by directing the contractor to avoid or minimize disturbance to riparian and aquatic systems, and to restore disturbed areas with native plants.
2. Minimize the likelihood of incidental take from in-water work activities by ensuring that the in-water work activities (*i.e.*, excavation of the alcove depression) are isolated from flowing water.
3. Evaluate and monitor the implementation of the reasonable and prudent measures, the erosion control measures, and the plantings for site restoration to ensure their effectiveness, and incorporate the terms and conditions in the USACE permit so that the applicant is fully informed.

2.2.3 Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, the USACE must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. To implement reasonable and prudent measure #1 (construction and channel alteration), the USACE shall ensure that:
 - a. Project design. Alteration or disturbance of the stream banks and existing riparian vegetation will be minimized.

- b. Timing of in-water work. Work within the active channel will be completed during the ODFW (2000) preferred in-water work period¹, as appropriate for the project area. Any work done outside of this period will first be approved in writing by the ODFW district biologist.
- c. Cessation of work. Project operations will cease under high flow conditions that may result in inundation of the project area, except for efforts to avoid or minimize resource damage.
- d. Fish screens. All water intakes used for a project, including pumps used to isolate an in-water work area or to withdraw water for construction purposes, will have a fish screen installed, operated and maintained according to NOAA Fisheries' fish screen criteria.²
- e. Fish passage. Passage will be provided for any adult or juvenile salmonid species present in the project area during construction, and after construction for the life of the project.
- f. Pollution and Erosion Control Plan. A pollution and erosion control plan will be prepared and carried out to prevent pollution related to construction operations. The plan must be available for inspection on request by NOAA Fisheries.
 - i. Plan Contents. The pollution and erosion control plan must contain the pertinent elements listed below, and meet requirements of all applicable laws and regulations.
 - a. Practices to prevent erosion and sedimentation associated with access roads, stream crossings, construction sites, borrow pit operations, haul roads, equipment and material storage sites, fueling operations and staging areas.
 - b. Practices to confine, remove and dispose of excess concrete, cement and other mortars or bonding agents, including measures for washout facilities.
 - c. A description of any hazardous products or materials that will be used for the project, including procedures for inventory, storage, handling, and monitoring.
 - d. A spill containment and control plan with notification procedures, specific clean up and disposal instructions for different products, quick response containment and clean up measures that will be available on the site, proposed methods for disposal of spilled materials, and employee training for spill containment.

¹ Oregon Department of Fish and Wildlife, *Guidelines for Timing of In-Water Work to Protect Fish and Wildlife Resources*, 12 pp (June 2000) (identifying work periods with the least impact on fish) (http://www.dfw.state.or.us/ODFWhtml/InfoCntrHbt/0600_inwtrguide.pdf)

² National Marine Fisheries Service, *Juvenile Fish Screen Criteria* (revised February 16, 1995) and *Addendum: Juvenile Fish Screen Criteria for Pump Intakes* (May 9, 1996) (guidelines and criteria for migrant fish passage facilities, and new pump intakes and existing inadequate pump intake screens) (<http://www.nwr.noaa.gov/1hydroweb/hydroweb/ferc.htm>).

- e. Practices to prevent construction debris from dropping into any stream or water body, and to remove any material that does drop with a minimum disturbance to the streambed and water quality.
- ii. Inspection of erosion controls. During construction, all erosion controls must be inspected daily during the rainy season and weekly during the dry season to ensure they are working adequately.³
 - a. If inspection shows that the erosion controls are ineffective, work crews must be mobilized immediately to make repairs, install replacements, or install additional controls as necessary.
 - b. Sediment must be removed from erosion controls once it has reached 1/3 of the exposed height of the control.
- g. Preconstruction activity. Before significant⁴ alteration of the project area, the following actions must be completed.
 - i. Marking. Flag the boundaries of clearing limits associated with site access and construction to prevent ground disturbance of critical riparian vegetation, wetlands and other sensitive sites beyond the flagged boundary.
 - ii. Emergency erosion controls. Ensure that the following materials for emergency erosion control are onsite:
 - a. A supply of sediment control materials (*e.g.*, silt fence, straw bales⁵).
 - b. An oil-absorbing, floating boom whenever surface water is present.
 - iii. Temporary erosion controls. All temporary erosion controls must be in-place and appropriately installed downslope of project activity within the riparian area until site restoration is complete.
- h. Earthwork. Earthwork (including drilling, excavation, dredging, filling and compacting) will be completed as quickly as possible.
 - i. Site stabilization. All disturbed areas must be stabilized, including obliteration of temporary roads, within 12 hours of any break in work unless construction will resume work within 7 days between June 1 and September 30, or within 2 days between October 1 and May 31.
 - ii. Source of materials. Boulders, rock, woody materials and other natural construction materials used for the project must be obtained outside the riparian area.
- i. Heavy Equipment. Use of heavy equipment will be restricted as follows:

³ "Working adequately" means no turbidity plumes are evident during any part of the year.

⁴ "Significant" means an effect can be meaningfully measured, detected or evaluated.

⁵ When available, certified weed-free straw or hay bales must be used to prevent introduction of noxious weeds.

- i. Choice of equipment. When heavy equipment must be used, the equipment selected must have the least adverse effects on the environment (e.g., minimally sized, rubber-tired).
 - ii. Vehicle staging. Vehicles must be fueled, operated, maintained and stored as follows:
 - a. Vehicle staging, cleaning, maintenance, refueling, and fuel storage must take place in a vehicle staging area placed 150 feet or more from any stream, water body or wetland.
 - b. All vehicles operated within 150 feet of any stream, water body or wetland must be inspected daily for fluid leaks before leaving the vehicle staging area. Any leaks detected must be repaired in the vehicle staging area before the vehicle resumes operation. Inspections must be documented in a record that is available for review if requested by NOAA Fisheries.
 - c. All equipment operated instream must be cleaned before beginning operations below the bankfull elevation to remove all external oil, grease, dirt, and mud.
 - iii. Stationary power equipment. Stationary power equipment (e.g., generators, cranes) operated within 150 feet of any stream, water body or wetland must be diapered to prevent leaks, unless otherwise approved in writing by NOAA Fisheries.
 - j.. Site restoration. All streambanks, soils and vegetation disturbed by the project are cleaned up and restored as follows:
 - i. Restoration goal. The goal of site restoration is renewal of habitat access, water quality, production of habitat elements (such as large woody debris), channel conditions, flows, watershed conditions and other ecosystem processes that form and maintain productive fish habitats.
 - ii. Streambank shaping. Damaged streambanks must be restored to a natural slope, pattern and profile suitable for establishment of permanent woody vegetation.
 - iii. Revegetation. Areas requiring revegetation must be replanted before the first April 15 following construction with a diverse assemblage of species that are native to the project area or region, including grasses, forbs, shrubs and trees.
 - iv. Fertilizer. No surface application of fertilizer may occur within 50 feet of any stream channel.
2. To implement reasonable and prudent measure #2, the USACE shall ensure that the in-water work activities (excavation of the alcove), are isolated from flowing water.
- a. If the fish salvaging aspect of this project requires the use of seine equipment to capture fish, it must be accomplished as follows:

- i. Before and intermittently during pumping, attempts will be made to seine and release fish from the work isolation area as is prudent to minimize risk of injury.
- ii. Seining will be conducted by, or under the supervision of a fishery biologist experienced in such efforts. Staff working with the seining operation must have the necessary knowledge, skills, and abilities to ensure the safe handling of all ESA-listed fish.
- iii. ESA-listed fish must be handled with extreme care and kept in water to the maximum extent possible during seining and transfer procedures. The transfer of ESA-listed fish must be conducted using a sanctuary net that holds water during transfer, whenever appropriate, to prevent the added stress of an out-of-water transfer.
- iv. Seined fish must be released as near as possible to capture sites.
- v. The USACE shall ensure that the transfer of any ESA-listed fish to third parties other than NOAA Fisheries personnel receives prior approval from NOAA Fisheries.
- vi. The USACE shall ensure that any other Federal, state, and local permits and authorizations necessary for the conduct of the seining activities will be obtained prior to project seining activity.
- vii. The USACE must allow NOAA Fisheries or its designated representative to accompany field personnel during the seining activity, and allow such representative to inspect the seining records and facilities.
- viii. A description of any seine and release effort will be included in a post-project report, including the name and address of the supervisory fishery biologist, methods used to isolate the work area and minimize disturbances to ESA-listed species, stream conditions before and following placement and removal of barriers, the means of fish removal, the number of fish removed by species, the condition of all fish released, and any incidence of observed injury or mortality.
- b. If the fish salvaging aspect of this project requires the use of electrofishing equipment to capture fish, it must be accomplished as follows (NMFS 2000):
 - i. Electrofishing may not occur near listed adults in spawning condition or near redds containing eggs.
 - ii. Equipment must be in good working condition. Operators must go through the manufacturer's preseason checks, follow all provisions, and record major maintenance work in a log.
 - iii. A crew leader having at least 100 hours of electrofishing experience in the field using similar equipment must train the crew. The crew leader's experience must be documented and available for confirmation; such documentation may be a logbook. The training must occur before an inexperienced crew begins any electrofishing; it must also be conducted in waters that do not contain listed fish.

- iv. Measure conductivity and set voltage as follows:

<u>Conductivity (umhos/cm)</u>	<u>Voltage</u>
Less than 100	900 to 1100
100 to 300	500 to 800
Greater than 300	150 to 400
 - v. Direct current (DC) must be used at all times.
 - vi. Each session must begin with pulse width and rate set to the minimum needed to capture fish. These settings should be gradually increased only to the point where fish are immobilized and captured. Start with pulse width of 500 us and do not exceed 5 milliseconds. Pulse rate should start at 30Hz and work carefully upwards. In general, pulse rate should not exceed 40 Hz, to avoid unnecessary injury to the fish.
 - vii. The zone of potential fish injury is 0.5 meters from the anode. Care should be taken in shallow waters, undercut banks, or where fish can be concentrated because in such areas the fish are more likely to come into close contact with the anode.
 - viii. The monitoring area must be worked systematically, moving the anode continuously in a herringbone pattern through the water. Do not electrofish one area for an extended period.
 - ix. Crew members must carefully observe the condition of the sampled fish. Dark bands on the body and longer recovery times are signs of injury or handling stress. When such signs are noted, the settings for the electrofishing unit may need adjusting. Sampling must be terminated if injuries occur or abnormally long recovery times persist.
 - x. Whenever possible, a block net must be placed below the area being sampled to capture stunned fish that may drift downstream.
 - xi. The electrofishing settings must be recorded in a logbook along with conductivity, temperature, and other variables affecting efficiency. These notes, with observations on fish condition, will improve technique and form the basis for training new operators.
 - c. After completion of the project the existing channel should be re-watered in a way that will not significantly impact water quality or cause fish stranding.
3. To implement reasonable and prudent measure #3 (monitoring and reporting), the USACE shall ensure that:
- a. Implementation monitoring. Ensure that MWC submits a monitoring report to the NOAA Fisheries within 120 days of project completion describing success meeting these terms and conditions. The monitoring report will include the following information.
 - i. Project identification
 - a. Permittee name, consultation number, and project name.
 - b. Type of activity
 - c. Project location

- d. MWC contact person.
 - e. Starting and ending dates for work completed
- ii. Narrative assessment. A narrative assessment of the project's effects on natural stream function.
- iii. Photo documentation. Photo of habitat conditions at the project and any compensation site(s), before, during, and after project completion.⁶
 - a. Include general views and close-ups showing details of the project and project area, including pre and post construction.
 - b. Label each photo with date, time, project name, photographer's name, and a comment about the subject.
- iv. Other data. Additional project-specific data, as appropriate for individual projects.
 - a. Work cessation. Dates work cessation was required due to high flows.
 - b. Fish screen. Compliance with NOAA Fisheries' fish screen criteria.
 - c. A summary of pollution and erosion control inspections, including any erosion control failure, hazardous material spill, and correction effort.
 - d. Site preparation.
 - i. Total cleared area – riparian and upland.
 - ii. Total new impervious area.
 - e. Isolation of in-water work area, capture and release.
 - i. Supervisory fish biologist – name and address.
 - ii. Methods of work area isolation and take minimization.
 - iii. Stream conditions before, during and within one week after completion of work area isolation.
 - iv. Means of fish capture.
 - v. Number of fish captured by species.
 - vi. Location and condition of all fish released.
 - vii. Any incidence of observed injury or mortality.
 - f. Site restoration.
 - i. Finished grade slopes and elevations.
 - ii. Log and rock structure elevations, orientation, and anchoring (if any).
 - iii. Planting composition and density.
- b. On an annual basis, for 5 years after completing the project, the USACE shall ensure submittal of a monitoring report to NOAA Fisheries describing the USACE's success in meeting their habitat restoration goals through project onsite

⁶ Relevant habitat conditions may include characteristics of channels, eroding and stable streambanks in the project area, riparian vegetation, water quality, flows at base, bankfull and over-bankfull stages, and other visually discernable environmental conditions at the project area, and upstream and downstream of the project.

restoration activities and through compensatory mitigation. This report will consist of the following information.

- a. Project identification.
 - a. Project name,
 - b. starting and ending dates of work completed for this project, and
 - c. the USACE contact person.
 - b. Site and channel relocation restoration. Documentation of the following conditions:
 - a. Any changes in rock structure elevations, orientation, and anchoring.
 - b. Any changes in planting composition and density.
 - c. A plan to inspect and, if necessary, replace failed plantings and structures, including the compensatory mitigation site.
 - c. Photographic documentation of environmental conditions at the project site after project completion.
 - d. Profile and cross sections must be surveyed annually. Bed material should be measured and compared to the design mix annually. Assessment of passage through the project should be done annually by a qualified biologist or engineer.
- c. If a dead, injured, or sick endangered or threatened species specimen is located, initial notification must be made to the NOAA Fisheries Law Enforcement Office, located at Vancouver Field Office, 600 Maritime, Suite 130, Vancouver, Washington 98661; phone: 360.418.4246. Care will be taken in handling sick or injured specimens to ensure effective treatment and care or the handling of dead specimens to preserve biological material in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered and threatened species or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.
- Oregon Habitat Branch Chief - Portland
NOAA Fisheries
Attn: 2002/01272
525 NE Oregon Street
Portland, OR 97232
- d. To ensure that the applicant is fully informed, USACE will incorporate the terms and conditions of this consultation in the permit that is issued to the applicant.

3. MAGNUSON-STEVENSON ACT

3.1 Background

The objective of the essential fish habitat (EFH) consultation is to determine whether the proposed actions may adversely affect designated EFH for relevant species, and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH resulting from the proposed action.

3.2 Magnuson-Stevens Fishery Conservation and Management Act

The MSA, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires the inclusion of EFH descriptions in Federal fishery management plans. In addition, the MSA requires Federal agencies to consult with NOAA Fisheries on activities that may adversely affect EFH.

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting the definition of essential fish habitat: “Waters” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; “substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities; “necessary” means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species' full life cycle (50 CFR 600.110).

Section 305(b) of the MSA (16 U.S.C. 1855(b)) requires that:

- Federal agencies must consult with NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH;
- NOAA Fisheries shall provide conservation recommendations for any Federal or state activity that may adversely affect EFH;
- Federal agencies shall within 30 days after receiving conservation recommendations from NOAA Fisheries provide a detailed response in writing to NOAA Fisheries regarding the conservation recommendations. The response shall include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation recommendations of NOAA Fisheries, the Federal agency shall explain its reasons for not following the recommendations.

The MSA requires consultation for all actions that may adversely affect EFH, and does not distinguish between actions within EFH and actions outside EFH. Any reasonable attempt to encourage the conservation of EFH must take into account actions that occur outside EFH, such as upstream and upslope activities, that may have an adverse effect on EFH. Therefore, EFH

consultation with NOAA Fisheries is required by Federal agencies undertaking, permitting or funding activities that may adversely affect EFH, regardless of its location.

3.3 Identification of EFH

The Pacific Fisheries Management Council (PFMC) has designated EFH for Federally-managed fisheries within the waters of Washington, Oregon, and California. Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC), and longstanding, naturally-impassable barriers (*i.e.*, natural waterfalls in existence for several hundred years) (PFMC 1999).

Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the *Pacific Coast Salmon Plan* (PFMC 1999). Assessment of the potential adverse effects to these species' EFH from the proposed action is based on this information.

The Pacific Fisheries Management Council (PFMC) has designated EFH for three species of Pacific salmon: Chinook (*Oncorhynchus tshawytscha*); coho (*O. kisutch*); and Puget Sound pink salmon (*O. gorbuscha*) (PFMC 1999). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC), and longstanding, naturally-impassable barriers (*i.e.*, natural waterfalls in existence for several hundred years). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the *Pacific Coast Salmon Plan* (PFMC 1999). Assessment of potential adverse effects to these species' EFH from the proposed action is based on this information.

3.4 Proposed Action

The proposed action is detailed above in section 1.2. The action area for this consultation includes the streambed and streambank of Willamette River within the area of disturbance at the project site and downstream to the extent of visible short-term turbidity increases resulting from the project work. This area has been designated as EFH for chinook salmon.

3.5 Effects of Proposed Action

Spring chinook salmon do spawn downstream of the confluence of Willamette River and the McKenzie River, but due to the lack of spawning habitat in Willamette River, they primarily use it for rearing as juveniles. This project will open up a small amount of rearing habitat for juveniles, and refugia for migrating adult salmonids and juveniles. As described in detail in section 2.1.5 of this Opinion, the proposed action may result in short term adverse effects to water quality (sediment pulses and possibly chemical contamination). NOAA Fisheries believes the implementation of the alcove construction project may adversely affect EFH for chinook

salmon. NOAA Fisheries also believes that providing fish passage and the conservation measures proposed as an integral part of the action would avoid, minimize, or otherwise offset potential adverse impacts to designated EFH.

3.6 Conclusion

NOAA Fisheries believes that implementation of the alcove construction project in the Willamette River will adversely affect designated EFH for chinook salmon.

3.7 EFH Conservation Recommendations

Pursuant to section 305(b)(4)(A) of the MSA, NOAA Fisheries is required to provide EFH conservation recommendations for any Federal or state agency action that would adversely affect EFH. The conservation measures proposed for the project by the USACE, all of the reasonable and prudent measures and the terms and conditions contained in sections 2.2.2 and 2.2.3, respectively, are applicable to chinook salmon EFH. Therefore, NOAA Fisheries incorporates each of those measures here as EFH recommendations.

3.8 Statutory Response Requirement

Please note that the MSA(section 305(b)) and 50 CFR 600.920(j) requires the Federal agency to provide a written response to NOAA Fisheries after receiving EFH conservation recommendations within 30 days of its receipt of this letter. This response must include a description of measures proposed by the agency to avoid, minimize, mitigate or offset the adverse impacts of the activity on EFH. If the response is inconsistent with a conservation recommendation from NOAA Fisheries, the agency must explain its reasons for not following the recommendation.

3.9 Supplemental Consultation

The USACE must reinitiate EFH consultation with NOAA Fisheries if either the action is substantially revised or new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations (50 CFR 600.920).

4. LITERATURE CITED

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this Opinion.

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